An ISO 9001:2015 & ISO/IEC 27001:2013
Quality Management System
Certified Company

MECADEZ
Insight Makes It Happen
MECADEZ CORE TECHNOLOGIES PRIVATE LIMITED
PROJECT MANAGEMENT CONSULTANCY SERVICES

Test Report
Quality of Bitumen

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 73 – 2013 (Paving Bitumen) & Specification for Road & Bridge Works, MORT&H, Revision V.
Grade of Bitumen	VG30
Location	Hot Mix Plant
Material	Bitumen
Sample No	1
Sample Collection Date	26-Jan-2023
Tested Date	27-Jan-2023

Sl. No.	Description	Test Results	Requirement as per IS:73-2013
1	Penetration at 25^{0}C , 1 / 10 mm	47	Min. 45
2	Softening Point, (^{0}C)	49	Min. 47
3	Specific Gravity	1.1	Min. 0.97
4	Ductility at 27^{0}C, in cm	42	Min. 40
5	Flash Point, (^{0}C)	224	Min. 220

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

No. 80, Aniketana, 14th 'B' Main, West of Chord Road, 2nd Stage, 2nd Phase, Mahalakshmipuram, Bengaluru - 560 086, Karnataka
mecadez@gmail.com +91 9538136111 +91 9483561234 www.mecadez.com

Scanned by TapScanner

Test Report
Quality of Bitumen

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 73 – 2013 (Paving Bitumen) & Specification for Road & Bridge Works, MORT&H, Revision V.
Grade of Bitumen	VG30
Location	Hot Mix Plant
Material	Bitumen
Sample No	2
Sample Collection Date	26-Jan-2023
Tested Date	27-Jan-2023

Sl. No.	Description	Test Results	Requirement as per IS:73-2013
1	Penetration at 25^0C , 1 / 10 mm	48	Min. 45
2	Softening Point, (^{0}C)	53	Min. 47
3	Specific Gravity	1.1	Min. 0.97
4	Ductility at 27^0C, in cm	44	Min. 40
5	Flash Point, (^{0}C)	227	Min. 220

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Rate of Spread of Tack Coat

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Location	At Site
Material	Bitumen (Tack Coat)
Sample No	1
Tested Date	1-Feb-2023

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.64	1.64	1.64
4	Final weight of plate after application of Tack Coat (c)	kg	1.65	1.651	1.652
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.01	0.011	0.012
6	Rate of spread (d/a)	kg / m^2	0.25	0.275	0.3
7	Average	kg / m^2	0.275		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m2		

Results: Rate of Spread of Tack Coat is: 0.275 kg / m2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report

Rate of Spread of Tack Coat

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Location	At Site
Material	Bitumen (Tack Coat)
Sample No	2
Tested Date	1-Feb-2023

Sl. No.	Determination	Unit	Test No 2		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.64	1.64	1.64
4	Final weight of plate after application of Tack Coat (c)	kg	1.651	1.653	1.652
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.011	0.013	0.012
6	Rate of spread (d/a)	kg / m^2	0.275	0.325	0.3
7	Average	kg / m^2	0.300		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m2		

Results: Rate of Spread of Tack Coat is: 0.300 kg / m2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Rate of Spread of Tack Coat

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Location	At Site
Material	Bitumen (Tack Coat)
Sample No	3
Tested Date	1-Feb-2023

Sl. No.	Determination	Unit	Test No 3		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.64	1.64	1.64
4	Final weight of plate after application of Tack Coat (c)	kg	1.65	1.653	1.651
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.01	0.013	0.011
6	Rate of spread (d/a)	kg / m^2	0.25	0.325	0.275
7	Average	kg / m^2	0.283		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m2		

Results: Rate of Spread of Tack Coat is: 0.283 kg / m2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Aggregate Impact Value

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 4) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Aggregate
Sample No	1
Sample Collection Date	26-Jan-2023
Tesed Date	29-Jan-2023

Sl. No.	Determination	Unit	Trails	
1	Weight of empty cylinder, w1	gm	960	960
2	Weight of container filled with Aggregate, w2	gm	1331	1333
3	Weight of the Aggregate before compaction, (w2 - w1) = w3	gm	371	373
4	Weight of the sample passing through 2.36 mm IS sieves after Impact, w4	gm	89	87
5	Weight of the sample retained on 2.36 mm IS sieve after Impact, w5	gm	282	286
6	Aggregate Impact Value (w4 / w3)x100	%	23.99	23.32
7	Specified Limit	%	24	

Results: Average Aggregate Impact Value: **23.66** %

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Aggregate Particle Shape

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Aggregates
Sample No	1
Sample Collection Date	26-Jan-2023
Teested Date	29-Jan-2023

I.S. Sieves Size		Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)		Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63	50	0.00	33.9	0.00	-	0.00
50	40	0.00	27	0.00	81	0.00
40	25	0.00	19.5	0.00	58.5	0.00
31.5	25	0.00	16.95	0.00	-	0.00
25	20	1620.3	13.5	300.3	40.5	318.3
20	16	1325.61	10.8	4.61	32.4	31.61
16	12.5	879.52	8.55	74.52	25.6	81.52
12.5	10	514.33	6.75	116.33	20.2	122.33
10	6.3	219.02	4.89	41.02	14.7	48.02
	SW	4558.78	SWf	536.78	SWe	601.78

Flakiness Index	11.77	%
Elongation Index	13.20	%

Combined Flakiness and Elongation Indices : 24.98 %

Comments: Maximum allowable Combined Flakiness and Elongation Indices for Bituminous Concrete is 35%.

Note:

i. The results indicated above are based on the tests carried out on the sample at site.
ii. The results relate only to the items tested.
iii. This test report should not be reproduced except in full, without written approval of this laboratory.
iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Aggregate Stripping Value

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Laboratory
Material	Aggregates / Bitumen
Sample No	1
Tesed Date	27-Jan-2023
Type of Aggregate	Coarse Aggregate
Type of Binder	60 / 70 Grade
Percentage of Binder Used	5% by weight
Total weight of Aggregate	200 gms
Total weight of Binder	10 gms
Temperature of water bath	40^{0}C

Observation Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.8	3.63	96.37
2	3.6		
3	3.5		

Comments: Minimum allowable Aggregate Stripping Value for Bituminous Concrete is 95%

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report

Specific Gravity and Water Absorption

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS: 2386 (Part - 111) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Aggregates
Sample No	1
Sapmle Collection Date	26-Jan-2023
Tested Date	27-Jan-2023

Sl. No.	Particulars	Computations	Test Numbers		Mean
			Test 1	Test 2	
1	Weight of Empty Basket Immersed in Water	W_1 g	761	763	
2	Wt of Basket Filled with Aggregates Immersed in water	W_2g	2082	2079	
3	Weight of Saturated Aggregate in water	W_sg = W_2- W_1	1321	1316	
4	Weight of saturated surface dry aggregate in Air	W_3 g	2117	2104	
5	Weight of water equal to the Volume of the Aggregate	W_3- W_s	796	788	
6	Weight of Oven dried Aggregate	W_4g	2079	2073	
7	Specific Gravity	W_4/(W_3- W_s)	2.61	2.63	2.62
8	Apparent Specific Gravity	W_4/(W_4- W_s)	2.74	2.74	2.74
9	Water Absorption	(W_4- W_3)*100/ W_4	1.83	1.5	1.67

Comments: Maximum allowable Aggregate Water Absorption value for Bituminous Concrete is 2.0%.

Note:

i. The results indicated above are based on the tests carried out on the sample at site.
ii. The results relate only to the items tested.
iii. This test report should not be reproduced except in full, without written approval of this laboratory.
iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	At Plant
Material	Aggregates
Sample No	1
Sample Collection Date	26-Jan-2023
Tested Date	29-Jan-2023

Weight of Sample: 4000 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19.00	0.00	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Grade II Specification for Bituminous Concrete
2	13.20	256.24	6.41	6.41	93.59	90-100	
3	9.50	784.23	19.61	26.01	73.99	70-88	
4	4.75	649.21	16.23	42.24	57.76	53-71	
5	2.36	546.27	13.66	55.90	44.10	42-58	
6	1.18	348.71	8.72	64.62	35.38	34-48	
7	0.60	324.85	8.12	72.74	27.26	26-38	
8	0.30	289.25	7.23	79.97	20.03	18-28	
9	0.15	200.13	5.00	84.97	15.03	12-20	
10	0.075	350.22	8.76	93.73	6.27	4-10	

Note:

i. The results indicated above are based on the tests carried out on the sample at site.
ii. The results relate only to the items tested.
iii. This test report should not be reproduced except in full, without written approval of this laboratory.
iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

An ISO 9001:2015 & ISO/IEC 27001:2013
Quality Management System
Certified Company

MECADEZ
Insight Makes It Happen
MECADEZ CORE TECHNOLOGIES PRIVATE LIMITED
PROJECT MANAGEMENT CONSULTANCY SERVICES

Test Report
Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	At Plant
Material	Aggregates
Sample No	2
Sample Collection Date	26-Jan-2023
Tested Date	29-Jan-2023

Weight of Sample: 4000 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19.00	0.00	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Grade ll Specification for Bituminous Concrete
2	13.20	261.51	6.54	6.54	93.46	90-100	
3	9.50	789.5	19.74	26.28	73.72	70-88	
4	4.75	654.48	16.36	42.64	57.36	53-71	
5	2.36	551.54	13.79	56.43	43.57	42-58	
6	1.18	353.98	8.85	65.28	34.72	34-48	
7	0.60	330.12	8.25	73.53	26.47	26-38	
8	0.30	294.52	7.36	80.89	19.11	18-28	
9	0.15	205.4	5.14	86.03	13.97	12-20	
10	0.075	355.49	8.89	94.91	5.09	4-10	

Note:

i. The results indicated above are based on the tests carried out on the sample at site.
ii. The results relate only to the items tested.
iii. This test report should not be reproduced except in full, without written approval of this laboratory.
iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

No. 80, Aniketana, 14th 'B' Main, West of Chord Road, 2nd Stage, 2nd Phase, Mahalakshmipuram, Bengaluru - 560 086, Karnataka
mecadez@gmail.com
+91 9538136111 +91 9483561234
www.mecadez.com

Scanned by TapScanner

Test Report
Stability of Mix

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Laboratory
Sample No	1
Tesed Date	1-Feb-2023

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.5	9 KN (min)
2	Marshal Flow	mm	2.8	2 – 4 mm
3	Percent of Air Voids in mix	%	4.4	3 – 6 %
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	66	65 – 75 %
5	Density	g/cc	2.32	-

Note:

i. The results indicated above are based on the tests carried out on the sample at site.
ii. The results relate only to the items tested.
iii. This test report should not be reproduced except in full, without written approval of this laboratory.
iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Stability of Mix

Project Name	Package 1 (1) Improvements of Road Adjacent to Vidyaranya Lake from Kanchamathalli to Chowdeshwari Temple in Ward No.12 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 11 (3) Improvements and Asphalting to Sugatpura layout cross roads in ward No. 11 (4) Improvements and Asphalting to Shanmukhaiah swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 11 (5) Asphalting to Balgere roads in A & B sector of Vidhanaka New Town in Ward No. 10
Client	Executive Engineer, Project Division Vidhanaka Town
Job No	MC/TPL/ASHWP/22/05/02 PMC/A (1)/20, 21/22
Mix Type	Bituminous Concrete (BC)
Contractor	M/s R. Infratech
Test Method	Specification for Road & Bridge Works, MORT&H, Revision 5
Location	Laboratory
Sample No	1
Tested Date	1 Feb 2022

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	N/A	9 KN (min)
2	Marshal Flow	mm	3.1	2 - 4 mm
3	Percent of Air Voids in mix	%	3.5	3 - 5 %
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	73	65 - 75 %
5	Density	g/cc	2.32	-

Note:

i. The results indicated above are based on the tests carried out on the sample as rec.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Bitumen Core Technologies Private Limited

Authorised Signatory

Asst. Executive Engineer
Project Division
Vidhanaka Town
BDMP, Bangalore - 92

Scanned by TapScanner

Test Report
Binder Content and Mix Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Laboratory
Sample No	1
Tesed Date	1-Feb-2023

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1768
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	688
4	Weight of bowl + Sample after extraction (w_s)	gm	w_{sa}	1736
5	Weight of Sample after extraction (i.e. washed aggregates)	gm	$S_a = w_{sa} - Eb$	656
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	42
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	40
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_B$)	(%)	W_a/ SbX100	5.81

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19	0	0	0	100.00	100	Gradation satisfies the MORT&H Grade II Specification for Bituminous Concrete
2	13.2	45.71	6.97	6.97	93.03	90-100	
3	9.5	100.37	15.30	22.27	77.73	70-88	
4	4.75	108.7	16.57	38.84	61.16	53-71	
5	2.36	90.45	13.79	52.63	47.37	42-58	
6	1.18	69.28	10.56	63.19	36.81	34-48	
7	0.6	60.62	9.24	72.43	27.57	26-38	
8	0.3	48.09	7.33	79.76	20.24	18-28	
9	0.15	33.08	5.04	84.80	15.20	12-20	
10	0.075	64.58	9.84	94.65	5.35	4-10	

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Binder Content and Mix Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Bituminous Concrete (BC)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Laboratory
Sample No	2
Tesed Date	1-Feb-2023

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1850
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	770
4	Weight of bowl + Sample after extraction (w_s)	gm	w_{sa}	1821
5	Weight of Sample after extraction (i.e. washed aggregates)	gm	$S_a = w_{sa} - Eb$	741
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	39
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	43
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_B$)	(%)	W_a/ SbX100	5.58

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Grade II Specification for Bituminous Concrete
2	13.2	48.4	6.53	6.53	93.47	90-100	
3	9.5	107.64	14.53	21.06	78.94	70-88	
4	4.75	137.54	18.56	39.62	60.38	53-71	
5	2.36	97.13	13.11	52.73	47.27	42-58	
6	1.18	74.59	10.07	62.79	37.21	34-48	
7	0.6	55.27	7.46	70.25	29.75	26-38	
8	0.3	72.15	9.74	79.99	20.01	18-28	
9	0.15	50.13	6.77	86.75	13.25	12-20	
10	0.075	42.67	5.76	92.51	7.49	4-10	

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Team For You
Temperature Record Log Sheet

Project Name Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04

Client Executive Engineer - Project Division Yelahanha Zone

Job No MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR

Mix Type Dense Graded Bituminous Macadam(DBM)

Contractor Sri R. Lokesh

Date 30-Jan-2023

Sl No	Tipper No	Time	Cleaning of the Surface	Application of Tackcoat	Mix Laying Temperature (C^0)	Mix Rolling Temperature (C^0)	Depth of the Mix Before Rolling (mm)	Depth of the Mix After Rolling (mm)	Remarks
1	KA05AL9027	9.10AM	Yes	Yes	142.5	90.4	67	50	
2	KA02AJ9027	9.55AM	Yes	Yes	143.2	93.1	66	50	
3	KA01AD3127	10.39AM	Yes	Yes	145.8	95.7	68	50	
4	KA05AL9027	11.15AM	Yes	Yes	140.9	92.5	67	50	
5	KA02AJ9027	11.15AM	Yes	Yes	145.6	90.7	66	50	
6	KA01AD3127	11.55AM	Yes	Yes	144.9	91.6	67	50	
7	KA05AL9027	12:25PM	Yes	Yes	140.2	93.3	65	50	
8	KA02AJ9027	12.05PM	Yes	Yes	141	96	67	50	
9	KA01AD3127	12.30PM	Yes	Yes	140	97	65	50	
10	KA05AL9027	12.55PM	Yes	Yes	142	95	66	50	
11	KA02AJ9027	1.25PM	Yes	Yes	143	96	65	50	
12	KA01AD3127	1.55PM	Yes	Yes	142	98	67	50	
13	KA05AL9027	2.30PM	Yes	Yes	141	95	65	50	

Consultant
BBMP

Asst Engineer
Project Division Yelahanka
BBMP

Asst Executive Engineer
Project Division Yelahanka
BBMP

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Team For You
Temperature Record Log Sheet

Project Name Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04

Client Excecutive Engineer - Mahalakshmipuram Division

Job No MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR

Mix Type Dense Graded Bituminous Macadam(DBM)

Contractor Sri R. Lokesh

Date: 31-Jan-2023

Sl No	Tipper No	Time	Cleaning of the Surface	Application of Tackcoat	Mix Laying Temperature (C^0)	Mix Rolling Temperature (C^0)	Depth of the Mix Before Rolling (mm)	Depth of the Mix After Rolling (mm)	Remarks
1	KA05AL9027	9:30AM	Yes	Yes	144.5	90.2	66	50	
2	KA02AJ9027	10.05AM	Yes	Yes	146.8	92.5	67	50	
3	KA01AD3127	10:45AM	Yes	Yes	147.5	90.8	68	50	
4	KA05AL9027	11:10AM	Yes	Yes	143.7	91.6	66	50	
5	KA02AJ9027	11:55AM	Yes	Yes	142.9	93.2	67	50	
6	KA01AD3127	12.35AM	Yes	Yes	140.1	94.8	67	50	
7	KA05AL9027	12.32PM	Yes	Yes	142.6	94.5	62	50	
8	KA02AJ9027	12.58PM	Yes	Yes	141.9	96.7	64	50	
9	KA01AD3127	1.35PM	Yes	Yes	143.5	98.3	62	50	
10	KA05AL9027	2.04PM	Yes	Yes	144.4	99.1	63	50	
11	KA02AJ9027	3.18PM	Yes	Yes	142.7	97.8	65	50	
12	KA01AD3127	3.56PM	Yes	Yes	145.1	92.3	64	50	
13	KA05AL9027	4.37PM	Yes	Yes	142.9	95.8	66	50	

Consultant Representative

Asst Engineer
Project Division Yelahanka
BBMP

Asst Executive Engineer
Project Division Yelahanka
BBMP

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Team For You
Temperature Record Log Sheet

Project Name Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04

Client Executive Engineer - Project Division Yelahanha Zone
Job No MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type Bituminous Concrete (BC)
Contractor Sri R. Lokesh
Date 1-Feb-2023

Sl No	Tipper No	Time	Cleaning of the Surface	Application of Tackcoat	Mix Laying Temperature (C^0)	Mix Rolling Temperature (C^0)	Depth of the Mix Before Rolling (mm)	Depth of the Mix After Rolling (mm)	Remarks
1	KA01AD3127	8:15AM	Yes	Yes	143.2	92.3	56	40	
2	KA05AL9027	8:40AM	Yes	Yes	146.7	96.7	59	40	
3	KA02AJ9027	9:15AM	Yes	Yes	148.3	92.6	55	40	
4	KA01AD3127	9:50AM	Yes	Yes	143.8	93.5	53	40	
5	KA05AL9027	10:25AM	Yes	Yes	149.2	94.7	54	40	
6	KA02AJ9027	10:55AM	Yes	Yes	148.8	90.8	57	40	
7	KA01AD3127	11:35AM	Yes	Yes	143.9	93.6	53	40	
8	KA05AL9027	12:10PM	Yes	Yes	143.7	94.6	52	40	
9	KA02AJ9027	12:50PM	Yes	Yes	146.6	91.9	53	40	
10	KA01AD3127	2:45PM	Yes	Yes	143.2	94.2	53	40	
11	KA05AL9027	3:20PM	Yes	Yes	147.6	93.1	59	40	
12	KA02AJ9027	3:55PM	Yes	Yes	142.8	96.4	54	40	
13	KA01AD3127	4:15PM	Yes	Yes	143.6	98.3	55	40	
14	KA05AL9027	4:50PM	Yes	Yes	144.4	92.8	58	40	
15	KA02AJ9027	5:10PM	Yes	Yes	141.8	95.3	53	40	
16	KA01AD3127	5:35PM	Yes	Yes	140.8	90.7	54	40	
17	KA05AL9027	6:05PM	Yes	Yes	145.7	93.5	50	40	
18	KA02AJ9027	5.10PM	Yes	Yes	145.1	96.7	52	40	
19	KA01AD3127	5.40PM	Yes	Yes	142.9	98.6	53	40	
20	KA05AL9027	6.10PM	Yes	Yes	144.7	92.4	56	40	

Consultant Representative BBMP

Asst Engineer
Project Division Yelahanka
BBMP

Asst Executive Engineer
Project Division Yelahanka
BBMP

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Mecadez Core Technologies Private Limited

Project Management Services

Summary of Frequencies of Field Tests and Lab Tests Conducted

Name of the work: Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04

Job No: MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR

Contractor Sri R. Lokesh

Sl. No	Particulars of the Tests	Precast Covering Slab (100mm Thick) Core Cut			
		Quantity Sqm	Frequency of Tests	Tests Required	Tests Carried Out
	Core Cutting				
1	Compressive strength test	91.94	One Test Per Source of supply	1	1

Note: Frequency of tests as per Specifications MORT&H, V Revision, Section 900.

consultant

contractor

ASSISTANT ENGINEER

ASSISTANT ENGINEER

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

Test Report
Concrete Compressive strength

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Precast Covering Slab (100mm Thick) Core Cut
Contractor	Sri R. Lokesh
Test Method	IS : 4031 (part 6)-1988 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Test Location	Laboratory
Sample No	1
Tested Date	3-Mar-2023

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (Kg/m³)	H/D	Correction Factor (Based on H/D)	Failure Load (KN)	Core Strength (N/mm²)	Correction Factor for the dia. (Strength of the Core X 1.08)	Corrected Cylinder Compressive Strength (N/mm²)	Equivalent Cube Compressive Strength (N/mm²)
1	100.00	98.69	0.64	825.358	0.9869	0.89	133.414	16.98	18.34	20.59	25.74
2	100.00	99.57	0.63	805.281	0.9957	0.89	131.45	16.73	18.07	20.27	25.33
3	100.00	98.42	0.65	840.553	0.9842	0.89	132.39	16.85	18.20	20.44	25.55

Results: Compressive strength of 100mm thick Precast Slab is 25.54 N/mm2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner